

**WHAT IS CLAIMED IS:**

1. A light-emitting device comprising:  
at least one blue light emitting diode as a blue light source;  
at least one red light emitting diode as a red light source; and

5 a fluorescent layer formed by mixing fluorescent powders with transparent resin; the fluorescent layer being glued to the blue light emitting diode and the red light emitting diode; the blue light emitting diode and the red light emitting diode emitting blue light and red light, respectively, which are then mixed; the fluorescent layer absorbing  
10 radiation having a blue light to emit light with wavelengths different from the blue light and red light.

2. The light-emitting device as claimed in claim 1, wherein the light emitted from the fluorescent layer due to the excitation of the blue and red light is mixed with the red light and the blue light so as to present white  
15 light.

3. The light-emitting device as claimed in claim 1, wherein the wavelength of the light from the fluorescent layer is between 500 and 585 nm.

4. The light-emitting device as claimed in claim 1, wherein the blue  
20 light from the blue light emitting diode has a wavelength between 360 and 480 nm and the red light from the red light emitting diode is between 585 and 780 nm.

5. The light-emitting device as claimed in claim 1, wherein the fluorescent powders of the fluorescent layer 30 are selected from one of  
25 Yttrium Aluminium Garnet, and  $\text{SmO}_{4-}$ , and  $\text{BxOy}_{3-}$ .

6. The light-emitting device as claimed in claim 1, wherein the blue light emitting diode and red light emitting diode are connected to a recess in a reflecting cover; the fluorescent layer is filled in the recess.

7. The light-emitting device as claimed in claim 1, wherein the blue light emitting diode and red light emitting diode are connected to a groove above a main lead frame; and the fluorescent layer is filled in the groove.

8. The light-emitting device as claimed in claim 1, wherein material of the fluorescent powders of the fluorescent layer is selected from one of a follow group containing YAG (yttrium aluminum garnet) activated by cerium and containing Y (yttrium) and Al (Aluminum) (YAG:  $\text{Ce}^{3+}$ ); YAG activated by europium (YAG:  $\text{Eu}^{2+}/\text{Eu}^{3+}$ ); and YAG activated by Terbium (YAG:  $\text{Tb}^{3+}$ ) and the combination thereof.

9. A light-emitting device comprising:

at least one blue light emitting diode as a blue light source;

at least one red light emitting diode as a red light source;

a fluorescent layer formed by mixing fluorescent powders with transparent resin; and the fluorescent layer enclosing the blue light emitting diode; and

a transparent resin layer enclosing the fluorescent layer and red light emitting diode; the blue light emitted from the blue light emitting diode stimulating the fluorescent layer to emit light with wavelengths different from the blue light and red light; the light emitted from the transparent resin layer so that the light from the fluorescent layer is mixed with blue light and red light to present light of another color.